

FIG. 1

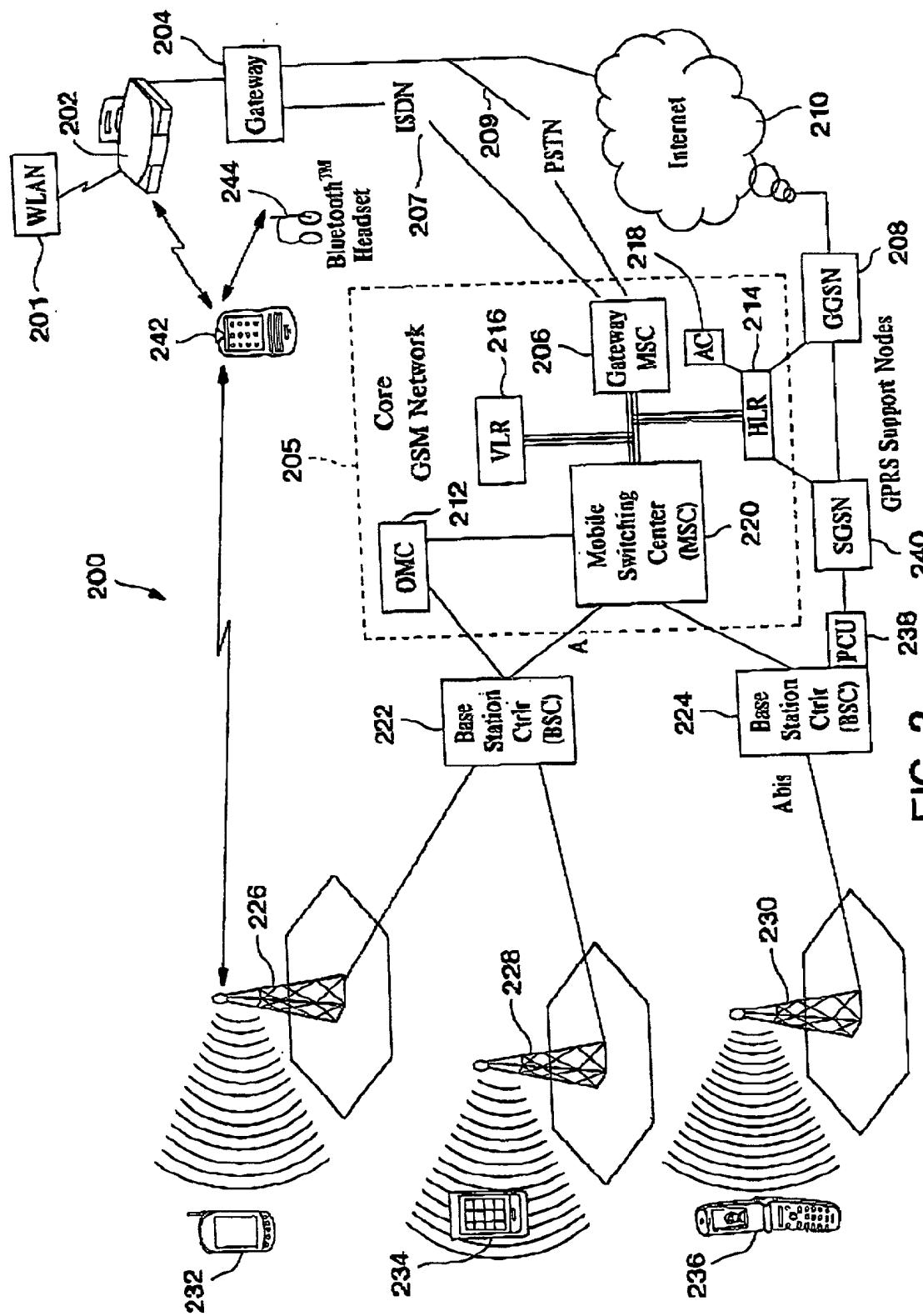
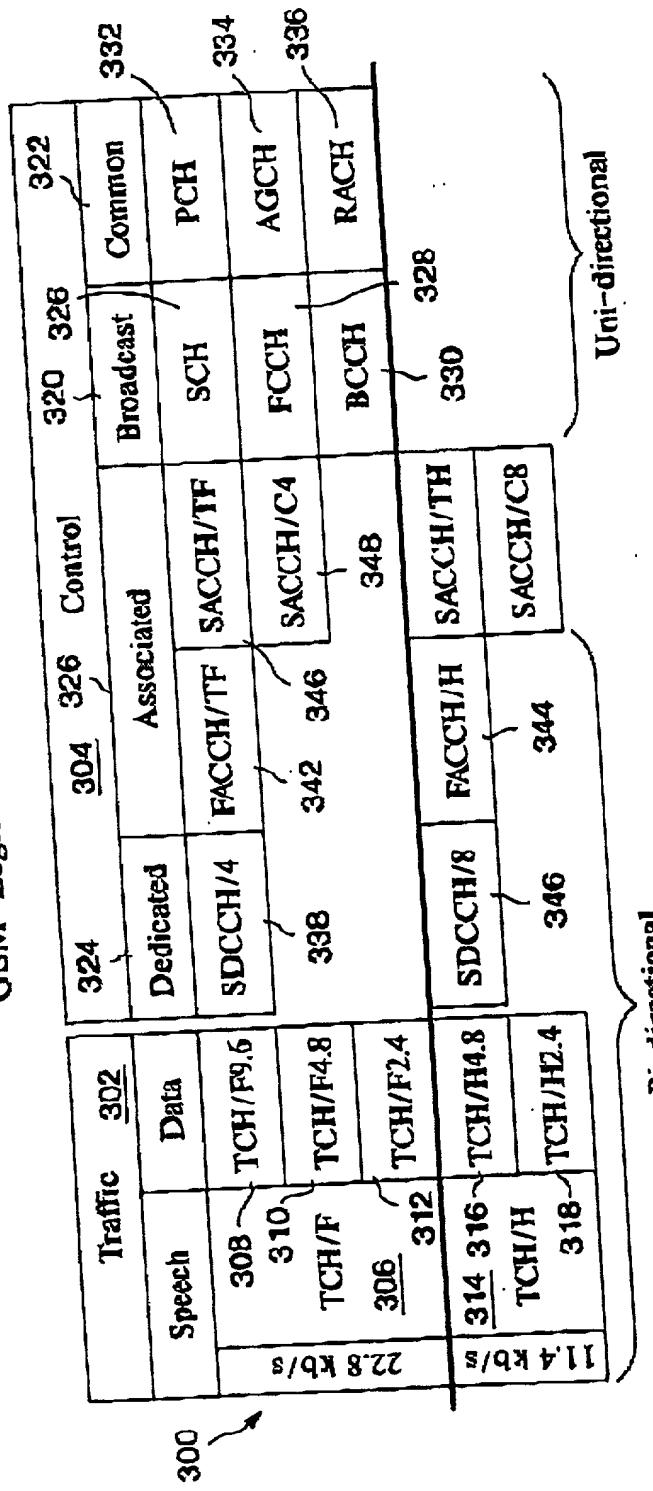


FIG. 2

GSM-Logical Channel Types



TCH:

SDCCH:

FACCH:

SACCH:

FCCCH:

SCH:

BCCCH:

PCH:

AGCH:

RACH:

Traffic - speech or data.

Standalone Dedicated - intermediate channel for authentication and call setup.

Fast Access Control - urgent commands to initiate hand-over - same information as SDCCH.

Slow Access Control - link maintenance (power, timing advance, e.t.c.)

Frequency Correction - MU clock and frequency synchronization - not for equalization.

Synchronization - MU frame and slot/time synchronization.

Broadcast Control - network configuration parameters for access.

Paging - alert for incoming call.

Access Grant - BS provides parameters for access to dedicated channel for call setup.

Random Access - MU posts requests to BS.

FIG. 3

Call Establishment Process—Mobile Originated

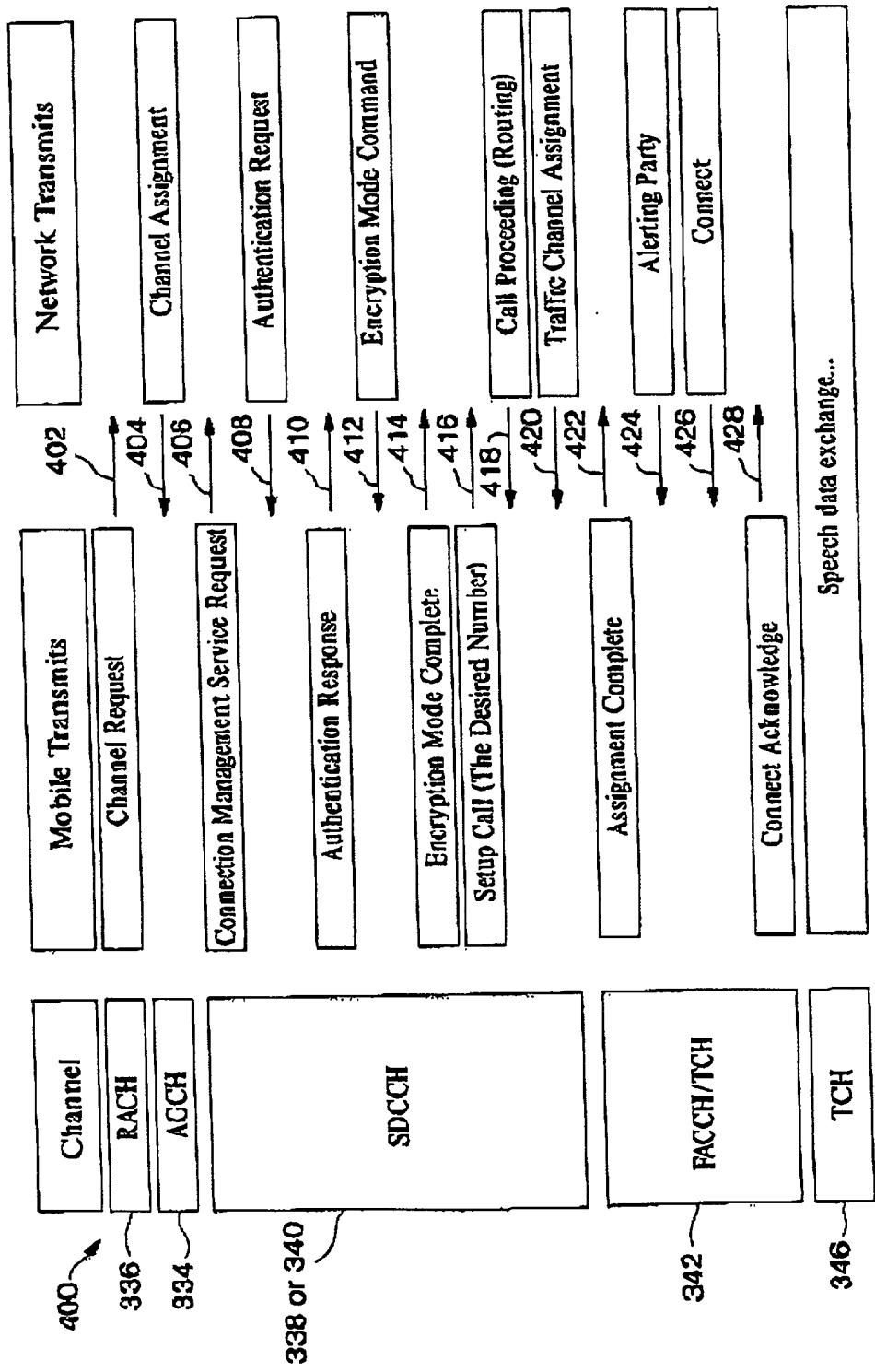


FIG. 4

Receiving a Call-Mobile Terminated

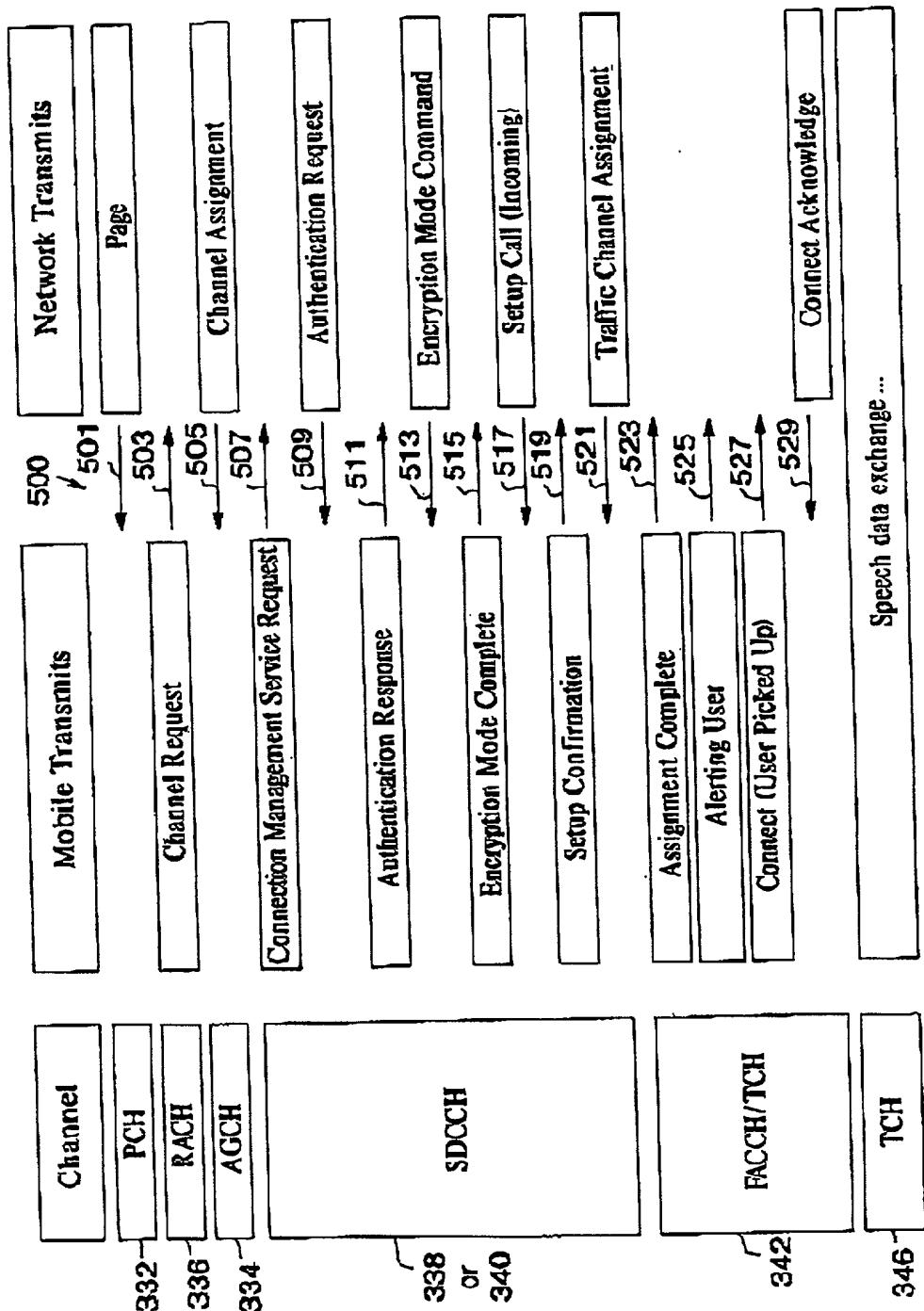


FIG. 5

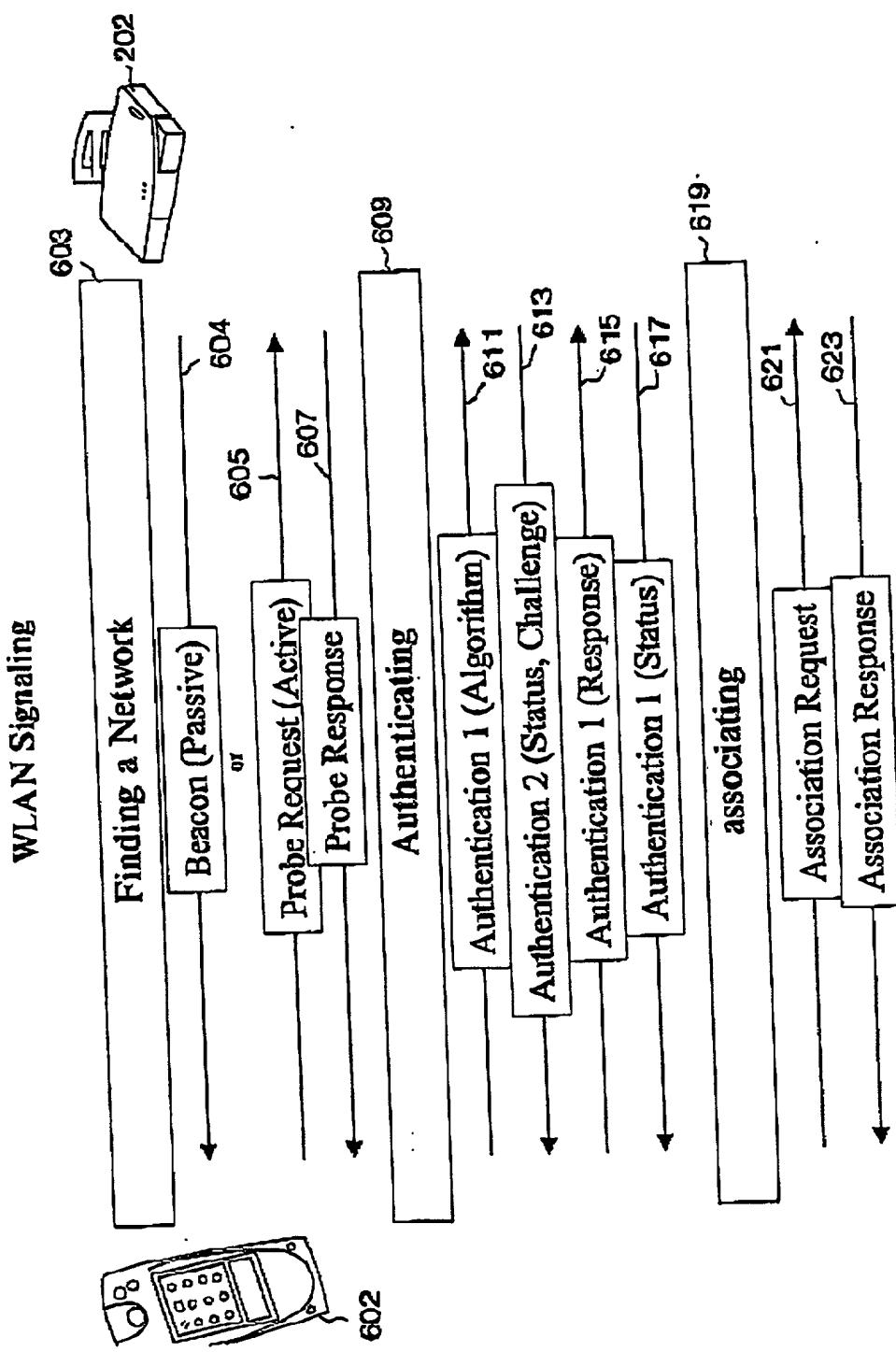
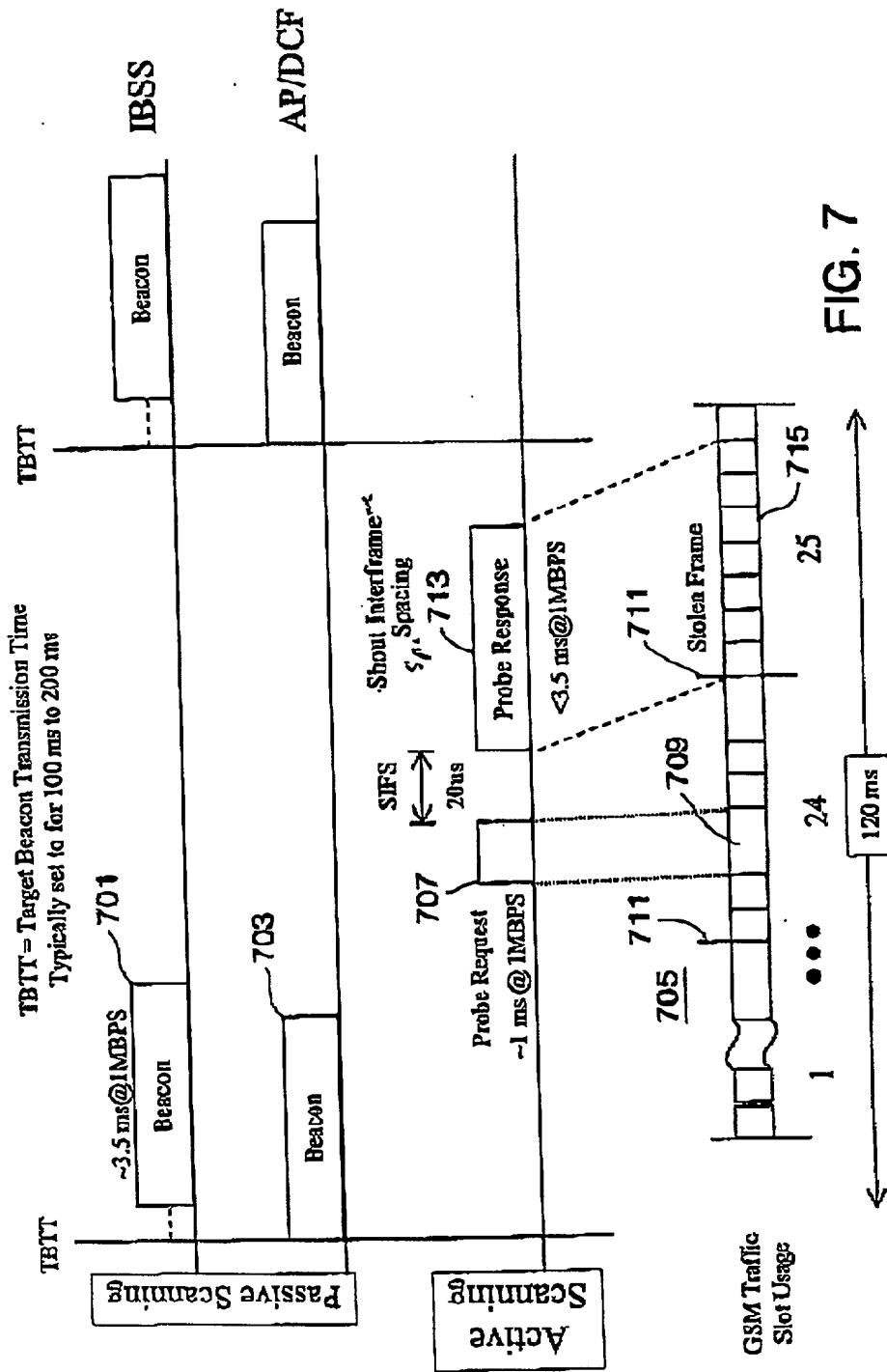
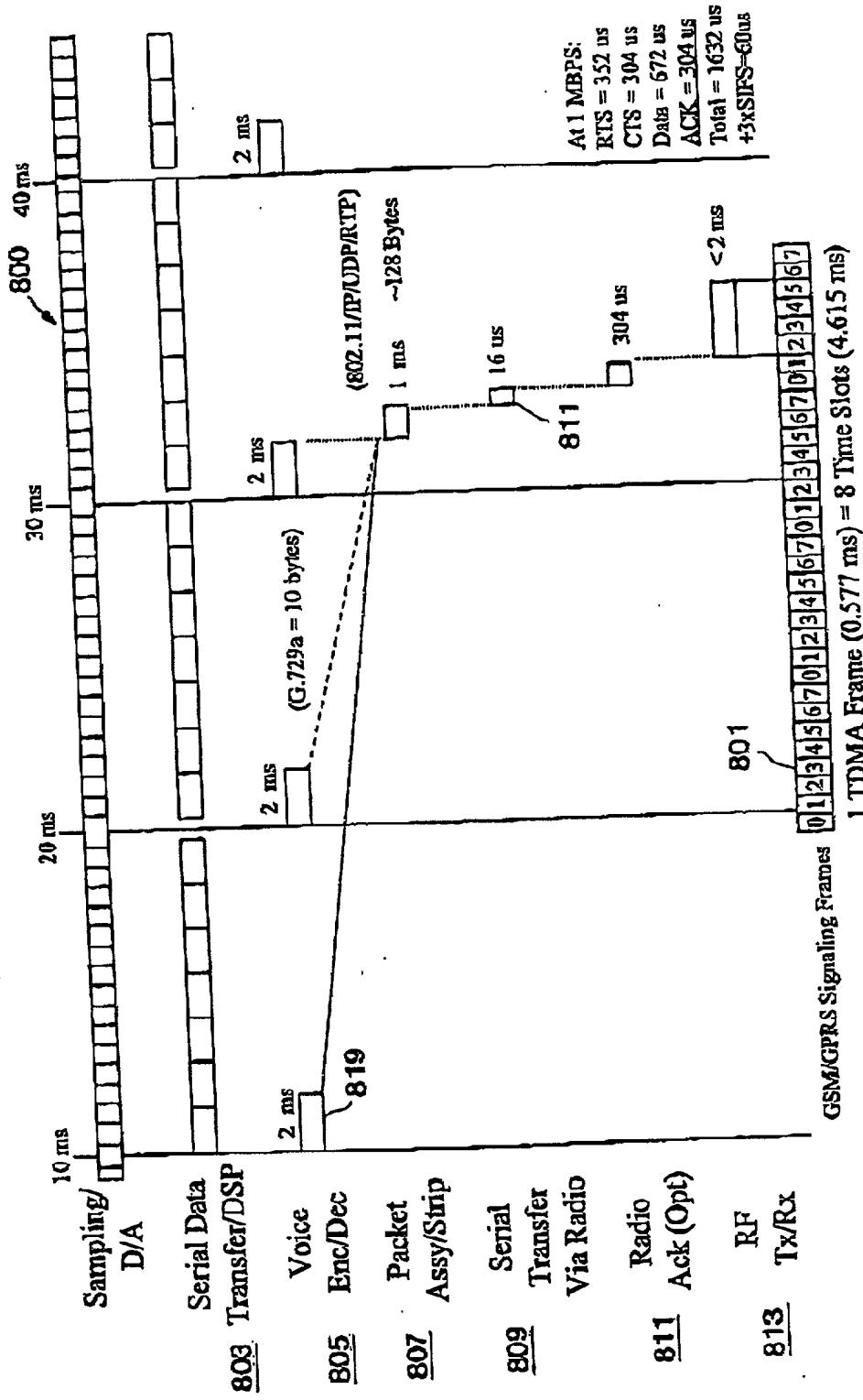


FIG. 6

**Interleaving WLAN Signaling with GSM Traffic
For example. Finding a Network**



Interleaving VoIP Traffic with GSM Signalling



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Current/Legacy Terminal Architecture

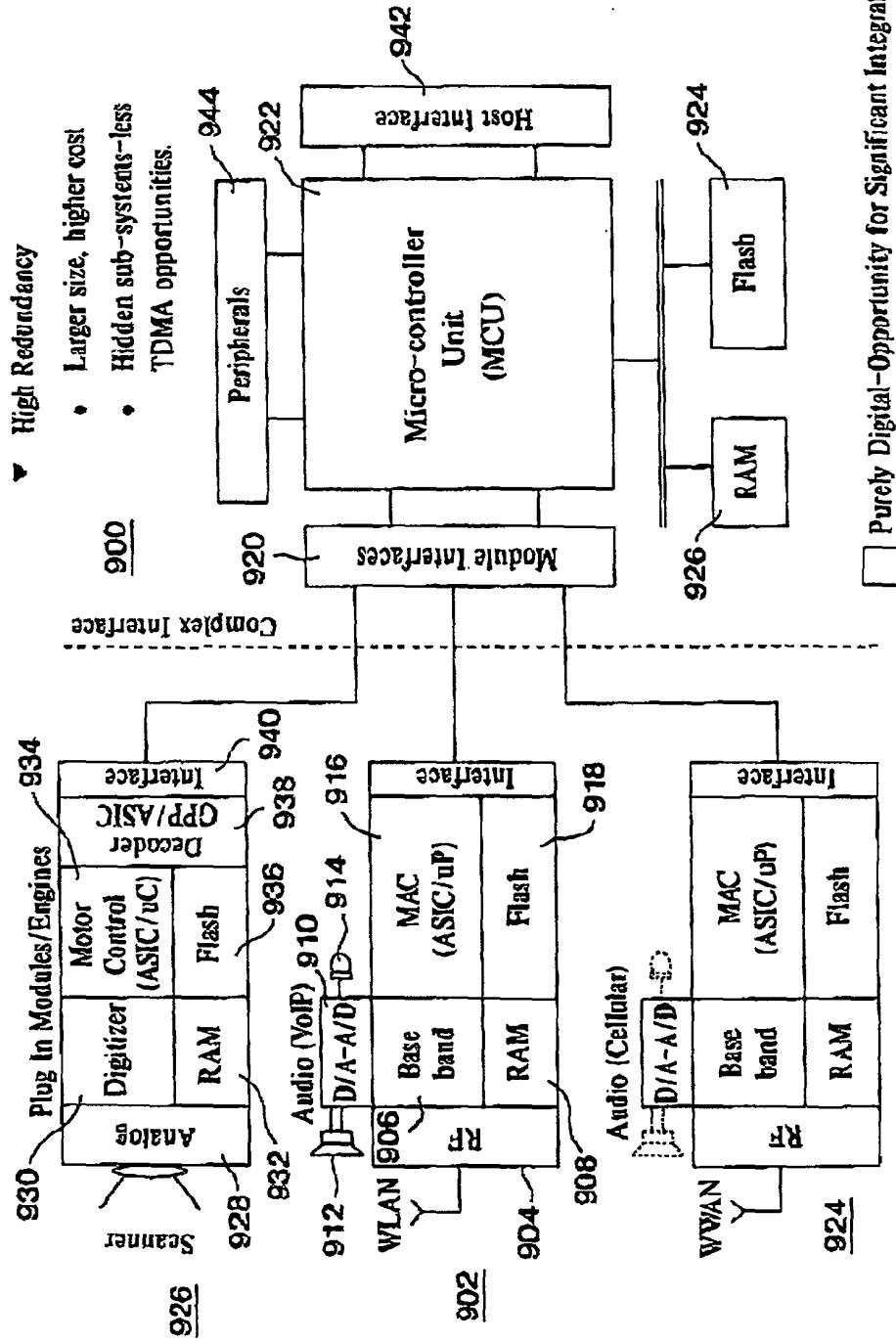


FIG. 9

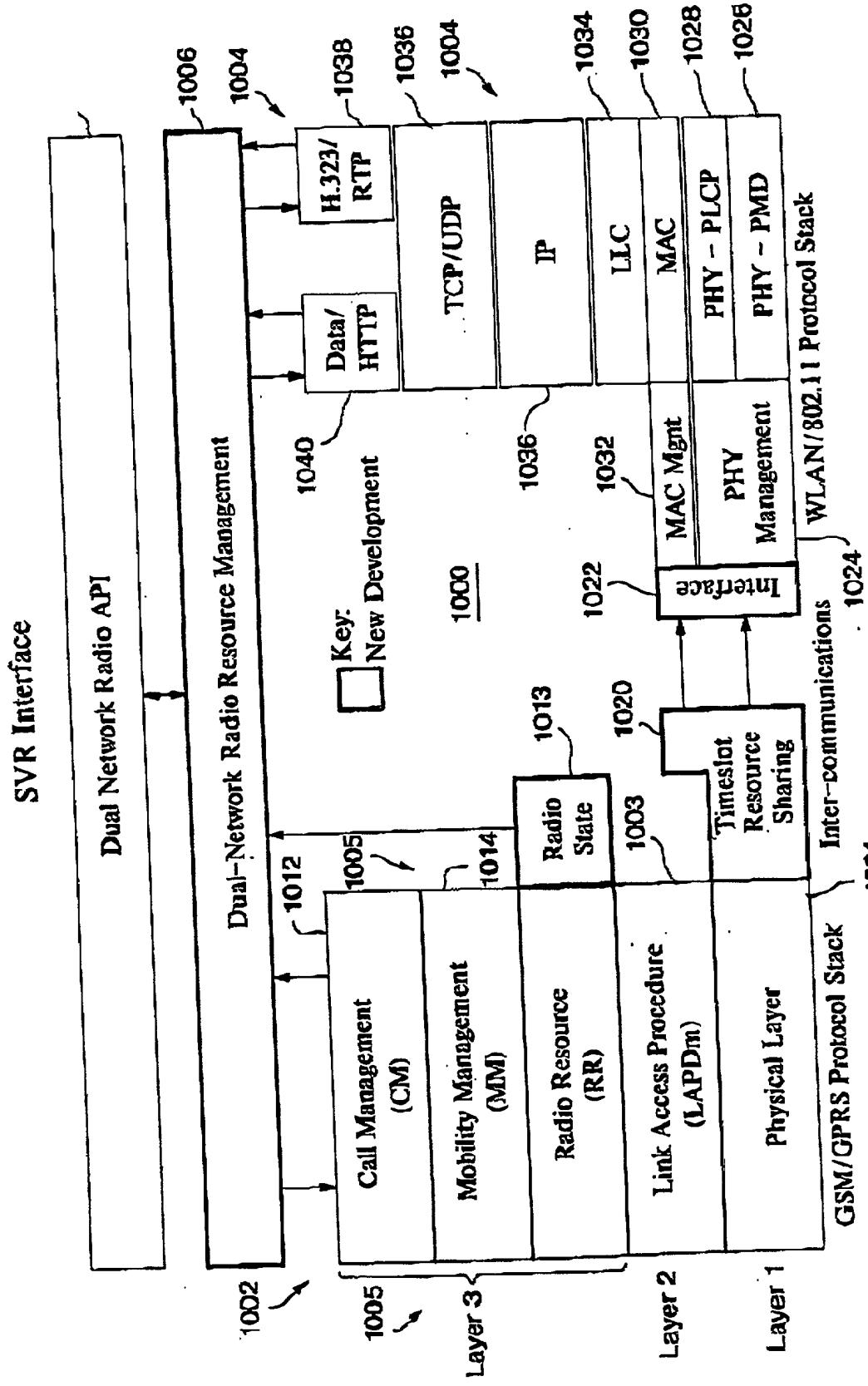


FIG. 10

Conditions for Seamless Vertical Roaming

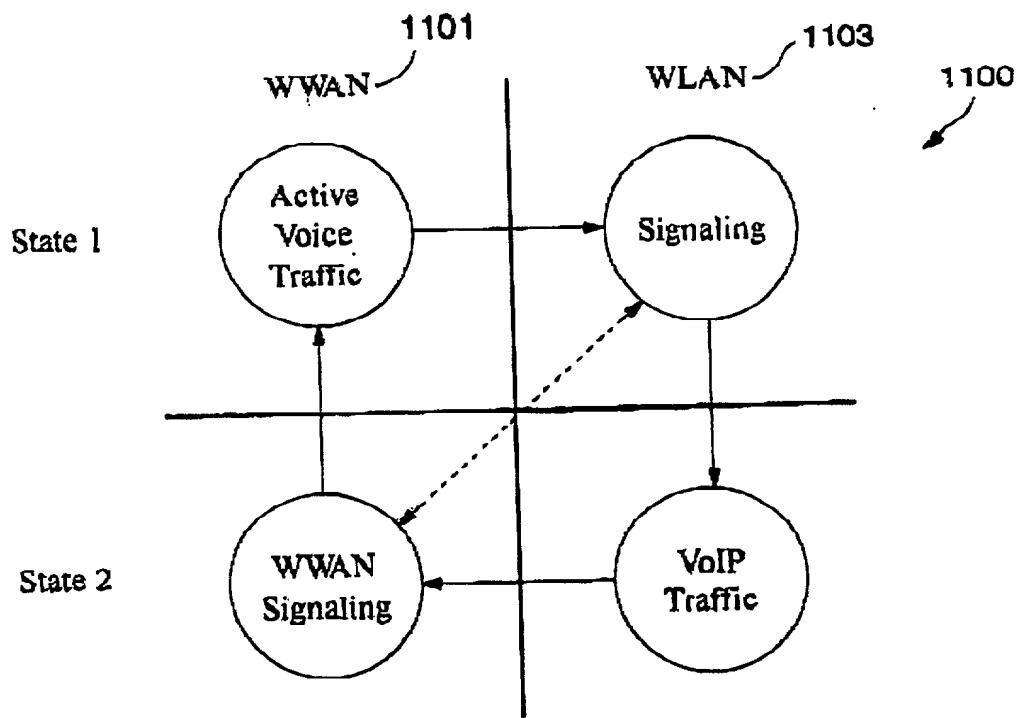


FIG. 11

SVR from WWAN to WLAN

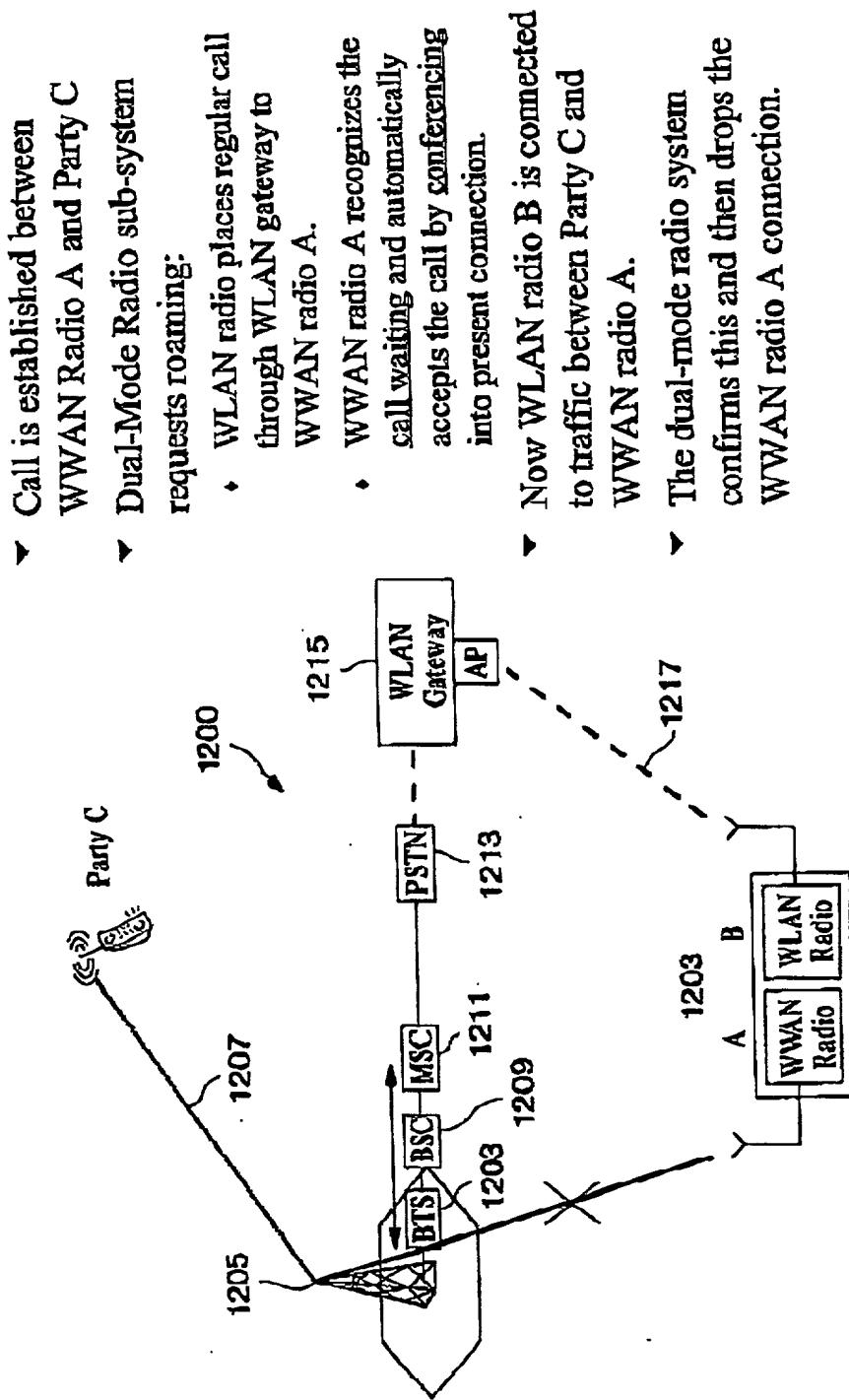


FIG. 12

SVR from WLAN to WWAN (GM)

- ▼ VoIP call is established between WLAN Radio B and Party C
- ▼ Dual-Mode Radio sub-system requests roaming:
 - WLAN radio places conference call through WLAN gateway to WLAN radio A.
 - WWAN radio A automatically accepts the call.
- ▼ Now WWAN radio A is connected to traffic between Party C and WLAN radio B.
- ▼ The dual-mode radio system confirms this and then drops the WLAN radio B connection.
- WLAN gateway maintains the conference call if it would be otherwise dropped when gateway disconnects.

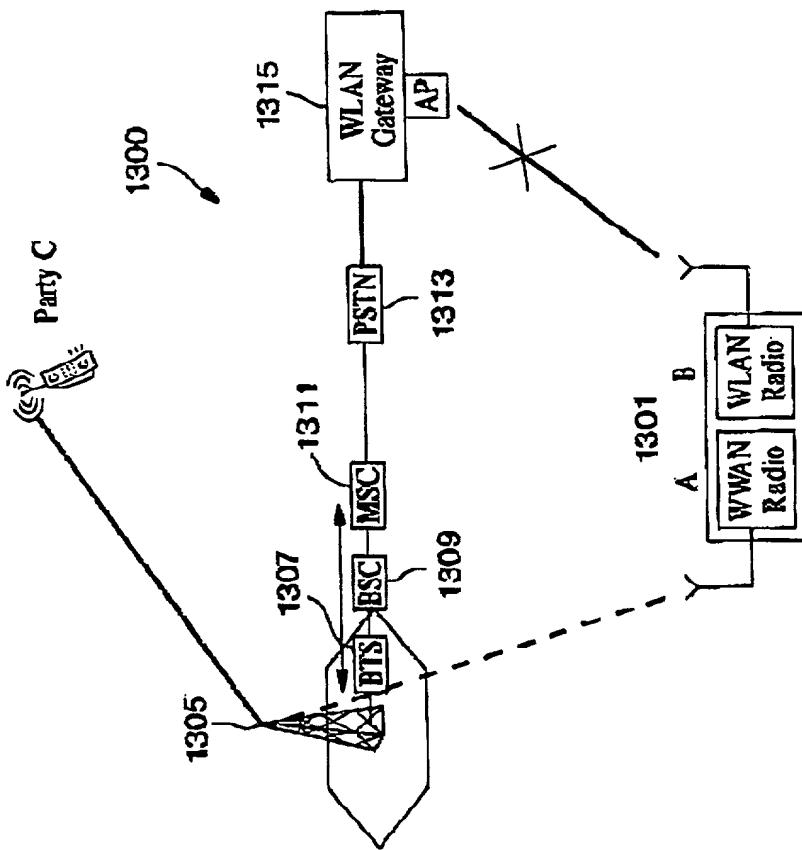


FIG. 13